REVIEW

The Standard for Clinicians' Interview in Psychiatry (SCIP): A Clinician-administered Tool with Categorical, Dimensional, and Numeric Output—

Conceptual Development, Design, and Description of the SCIP

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ABSTRACT

Existing standardized diagnostic interviews (SDIs) were designed for researchers and produce mainly categorical diagnoses. There is an urgent need for a clinician-administered tool that produces dimensional measures, in addition to categorical diagnoses. The Standard for Clinicians' Interview in Psychiatry (SCIP) is a method of assessment of psychopathology for adults. It is designed to be administered by clinicians and includes the SCIP manual and the SCIP interview. Clinicians use the SCIP questions and rate the responses according to the SCIP manual rules. Clinicians use the patient's responses to questions, observe the patient's behaviors and make the final rating of the various signs and symptoms assessed.

The SCIP method of psychiatric assessment has three components: 1) the SCIP interview (dimensional) component, 2) the etiological component, and 3) the disorder classification component. The SCIP produces three main categories of clinical data: 1) a diagnostic classification of psychiatric disorders, 2) dimensional scores, and 3) numeric data. The SCIP provides diagnoses consistent with criteria

from editions of the *Diagnostic and Statistical Manual* (*DSM*) and *International Classification of Disease* (*ICD*). The SCIP produces 18 dimensional measures for key psychiatric signs or symptoms: anxiety, posttraumatic stress, obsessions, compulsions, depression, mania, suicidality, suicidal behavior, delusions, hallucinations, agitation, disorganized behavior, negativity, catatonia, alcohol addiction, drug addiction, attention, and hyperactivity. The SCIP produces numeric severity data for use in either clinical care or research. The SCIP was shown to be a valid and reliable assessment tool, and the validity and reliability results were published in 2014 and 2015. The SCIP is compatible with personalized psychiatry research and is in line with the Research Domain Criteria framework.

HISTORICAL PERSPECTIVES ON THE ASSESSMENT OF PSYCHOPATHOLOGY

The history of mental illness and description of mental symptoms are closely intertwined with the social history of humankind. Descriptions of individuals with "strange," "maladaptive," or "dangerous" behaviors have been documented in some of the first known written records.[1] The descriptions of King Saul's homicidal and suicidal thoughts in the Old Testament (in about 1,000 B.C.) point to the presence of extreme mood disorder. Greek philosophers, including Plato, Aristotle, and Hippocrates, described various forms of madness—mania, hysteria, paranoia, melancholia, and dementia. It is striking that prior to the 19th century, the subjective experiences of the patients were not valued and there was no real descriptive psychopathology. The great diagnostic categories inherited by the 19th century, such as melancholia, mania, delirium, dementia, and paranoia, relied on the observation of what the individual did, looked like, and said, rather than on how the individual felt.[2]

The science of mental symptoms and signs (descriptive psychopathology) was developed in Europe in the 19th century, and the science of classification of mental disorders (psychiatric nosology) proceeded to advance significantly in the 20th century. At the beginning of 19th century, the science of mental symptoms started to develop in Europe and has taken about 100 years to complete. The incorporation of subjective experiences of the patients into the symptom repertoire of psychopathology was a significant achievement of the science of descriptive psychopathology in the 19th century.[2] Patients' subjective feelings of anxiety, mood, melancholia, mania, paranoia, hallucinations, and other mental symptoms were described, analyzed, and classified.[2] The advances in the science of mental symptoms in the 19th century paved the way for the development of psychiatric nosology in the twentieth century.

At the turn of the 20th century, Kraepelin conceptualized his famous "dichotomy theory" that divided the "insanities" broadly into two diseases: dementia praecox (later renamed schizophrenia by Eugen Bleuler) and manic-depressive illness (later renamed bipolar disorder by Karl Kleist).[3] His classification model was enshrined in Western psychiatry for more than a century, even though Kraepelin himself revised his theory in 1920.[3] In 1933, Jacob Kasanin coined the term *schizoaffective* to describe patients with equal measure of co-existing psychotic and manic and/or depressive symptoms.[4] As an example of the beginning of advancement in psychiatric nosology, a survey conducted in 1936 in the Eastern Health District of Baltimore by Paul Lemkau[5] described several types of psychosis, including schizophrenia, manic-depressive, involutional, senile and arteriosclerotic, alcoholic, syphilitic, with epilepsy, with mental deficiency. The same survey described the following types of psychoneurosis: hysteria, psychasthenia, neurasthenia, hypochondriasis, reactive depression, anxiety attacks, and mixed psychoneurosis.[5] When psychoanalysis dominated American psychiatry, psychiatric nosology was put on the back burner for decades because psychoanalysts had always believed that psychiatric diagnosis was largely irrelevant for making psychotherapy treatment decisions.[6,7]

In the beginning of the second half of the 20th century, psychiatric nosology started to expand gradually due to the efforts of the World Health Organization (WHO) and the American Psychiatric Association (APA). The World Health Organization (WHO) published the sixth revision of the *International Classification of Diseases* (*ICD-6*) in 1948, which included a mental disorders section.[8] Several editions of the *ICD* followed, including the 10th (and latest), published in 1993.[9] In the United States, the American Psychiatric Association Committee on Nomenclature and Statistics developed and published the first edition of the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-I*) in 1952, followed by the *DSM-II* in 1968.[10,11] A major paradigm shift in psychiatric nosology in the 20th century was achieved in 1980 with the publication of the *DSM-III*.[12] The publication of the *DSM-III* represented a turning point in the history of psychiatric nosology because it included the long-awaited, detailed, explicit, and specific criteria for many psychiatric disorders.[13] Revisions of the *DSM-III* continued with the publications of the *DSM-III-Revised (R)*, *DSM-IV*, *DSM-IV-Text Revision* (TR), and the *DSM-5*.[14–17] The *DSM-5*, though mainly categorical in its classification, has promoted cross-cutting symptom measures and has reordered diagnoses to stimulate new clinical perspectives.

Because the *DSM-III* provided psychiatrists with a standardized diagnostic nomenclature, their enterprises flourished, and investigative psychiatrists

collaborated with geneticists, pharmacologists, and brain imagers.[7] The advances in psychiatric nosology have resulted in the development of systematic instruments to assess and measure psychiatric symptoms and evaluate the diagnostic criteria of mental disorders. Rating scales, designed to quantify symptoms, included the Positive and Negative Syndrome Scale (PANSS), Brief Psychiatric Rating Scale (BPRS), Hamilton Rating Scale for Depression (HAM-D), Yale-Brown Obsessive Compulsive Scale (Y-BOCS) and others.[18–21] However, rating scales focus on narrow clusters of symptoms that do not necessarily incorporate details of the entire clinical picture and have not been shown to have the same predictive utility as diagnoses.[22] Rating scales are mostly used by research psychiatrists and psychologists, while the vast majority of psychiatric practitioners rarely use them in clinical practice.

In addition to rating scales, Standardized Diagnostic Interviews (SDIs) were developed with the main goal of arriving at a diagnosis based on the existing classification systems. Some SDIs, such as the World Health Organization Composite International Diagnostic Interview (CIDI) and the Mini-International Neuropsychiatric Interview (M.I.N.I.), are fully structured.[23,24] For clinicians, semi-structured interviews were designed to allow for considerable variation in the interviewing style, depth of probing, and clinical judgment as to whether a patient's description of a particular behavior meets the relevant diagnostic criterion.[25] Two widely used semi-structured interviews in the assessment literature are the Structured Clinical Interview for *DSM-IV* Axis I Disorders (SCID-I) and the Schedules for Clinical Assessment in Neuropsychiatry (SCAN).[25–27]

The Structured Clinical Interview for *DSM-IV* Axis I Disorders (SCID-I) was designed with a top-down approach: questions are grouped by diagnosis and criteria; within each diagnosis, if a required criterion is not met, the interviewer skips the remaining questions assessing the other criteria for that diagnosis. The SCID-I authors claimed that the SCID-I was more "clinician-friendly" than the other structured diagnostic instruments.[26] Many SCID-I users, (including the authors), can make a case that the SCID-I tends to be lengthy and cumbersome and may interfere with establishing rapport with patients. Realizing that the SCID-I was not as clinician-friendly as they first claimed, the SCID-I authors subsequently published the SCID-Clinical Version (SCID-CV) in 1997. This modified version of the SCID-I includes only the *DSM-IV* diagnoses most commonly seen in clinical practice.[28] The SCID-CV is simply an abbreviation of the original SCID-I, and in our opinion is not compatible with clinicians' style of interviewing and has not been adopted by clinicians in real practice.

The Schedules for Clinical Assessment in Neuropsychiatry (SCAN) is another semi-structured interview developed under the auspices of the World Health Organization (WHO). It utilizes the bottom-up approach: after comprehensive baseline symptom assessment, algorithms are used to make psychiatric diagnoses.[27] Similar to the SCID-I, the SCAN is lengthy, cumbersome, and requires extensive training. For these reasons, FJ Nienhuis, a member of the SCAN Advisory Committee, devised a shorter version of the SCAN (mini-SCAN) to promote the clinical use of the SCAN.[29] The mini-SCAN simplifies the symptom severity rating into absent or subclinical (0) and symptom level (1) and diagnoses only current episodes. The Mini-International Neuropsychiatric Interview (M.I.N.I.) was developed by DL Sheehan as a short, structured diagnostic interview.[24] However, as the M.I.N.I. covers more disorders, it takes a longer time to administer (45 minutes or longer for M.I.N.I.-Plus Version). Overall, the M.I.N.I. is simpler and shorter than the SCID-I and the SCAN and has some acceptance in clinical settings.[30] On the downside, the M.I.N.I. is simply a checklist of symptoms, and the clinical approaches of probing and exploring the symptoms are largely lost.[29]

Considering the most popular existing standardized diagnostic interviews (SDIs) and the efforts to modify them for clinicians' use, two facts stand out. First, the existing instruments were primarily designed for researchers. None was designed from the outset for clinicians to use in real clinical practice. Second, not surprisingly, the literature indicates that clinicians do not use structured interviews or rating scales in real clinical settings.[30–37] One survey of mental health practitioners found that 98 percent did not use any of the four clinical rating scales routinely used in pivotal clinical trials required for the United States Food and Drug Administration's approval of new psychotropic medications. These rating scales are the PANSS, Young Mania Rating Scale (YMRS),[38] HAM-D, and Montgomery-Asberg Depression Rating Scale (MADRS).[39] Lack of time was the most common reason cited for not using these tools.[37] In another survey, 72.5 percent of psychiatrists said that they do not use structured interviews in clinical settings.[30] The three most commonly cited reasons for not using structured interviews were constraints on time, the perception and reality that structured interviews are research tools, and that structured interviews interfere with establishing rapport with patients.[30]

Considering these serious gaps in the literature, namely the lack of an instrument designed for psychiatrists to use in clinical settings and the lack of a clinician-administered tool with dimensional measures, the first author of this article (AA) devised the Standard for Clinicians' Interview in Psychiatry (SCIP). The SCIP was shown to be a valid and reliable diagnostic interview.[40,41]

THE DESIGN FEATURES OF THE SCIP

***Bottom First Then Top*: the SCIP approach to psychiatric diagnosis:** Two approaches to psychiatric diagnosis have been described in the literature: the "top-down" approach and the "bottom-up" approach. The advantages and disadvantages of each have been described elsewhere.[26,27,42–44] In the top-down approach, exemplified by the SCID-I, questions are grouped by diagnosis and criteria; within each diagnosis, if a required criterion is not met, the interviewer skips the remaining questions assessing the other criteria for that diagnosis. For example, if the patient denies depressed mood and anhedonia, the SCID-I instructs the interviewer to skip the remaining questions for the diagnosis of major depression.[26] The top-down approach leads to efficient interviews by focusing on diagnoses, facilitates clinical communication, and improves reliability. On the other hand, diagnostic interviews based upon the top-down approach tend to be biased toward preconceived diagnostic criteria, lack validity, may result in loss of important information, and need to be updated every time the diagnostic system changes. With the publications of *DSM-5* in May 2013, the SCID-I requires major changes to be compatible with the new *DSM-5* diagnoses criteria. Using the bottom-up approach, as exemplified by the SCAN, the interview is based upon a comprehensive assessment of symptoms, while being agnostic to diagnosis.[27] After symptoms assessment, algorithms are used to make psychiatric diagnoses. The bottom-up approach has the advantages of avoiding biases toward preconceived diagnoses and can survive diagnostic criteria changes. However, the bottom-up approach leads to lengthy interviews and may lack the precision needed to fulfill diagnostic criteria.[44]

Seasoned and competent psychiatrists generally use the *Bottom First Then Top* (BFTT) approach, a term coined by the first author (AA), in diagnostic assessment. An ideal diagnostic psychiatric interview starts with a bottom-up approach: the psychiatrist establishes rapport with the patient and inquires about chief complaint(s) and history of the present illness. The patient is initially allowed to take the lead to express feelings, thoughts, current stressors, and other problems. The psychiatrist continues the bottom-up approach by obtaining a detailed life history, screening for symptoms, examining mental status, exploring potential causes of symptoms, and utilizing records and informants as needed. As the psychiatrist narrows down the potential differential diagnoses, the top-down approach takes over the interview process. The psychiatrist checks the symptoms and decides whether the patient meets the diagnostic criteria of a disorder. The SCIP reflects the BFTT approach of psychiatric assessment through its three components: the SCIP interview component and the etiological component are mainly bottom-up approaches. The disorders classification component is mainly a top-down approach. The mission of the BFTT approach is to listen to and understand the patient first and then focus on making a diagnosis. The SCIP Instruction Manual explains the three components of the SCIP (Appendix A). Another term proposed to this approach is *Patient First Then Clinician* (PFTC) highlighting the importance of listening and understanding the patient first before making a diagnosis.

Phases of development of the SCIP. *Initial phase.* Between the years 2000 and 2004, the SCIP questions were developed, phrased, rephrased, and changed to fit the actual clinical interviews conducted by psychiatrists. The first 110 SCIP interviews included demographic and screening data. The rest of the SCIP interviews included demographic, screening, and modular data.

Validity and reliability testing phase. The validity of the SCIP was tested by comparing the diagnoses generated by the SCIP method against the diagnoses generated by the SCAN interview and the diagnoses provided by experts (both were considered to be gold standard diagnoses). The reliability of the SCIP was tested using the Kappa mehtod for inter-rater reliability and Cronbach's alpha method for internal consistency.

Multi-site phase. Two sites in Egypt (Mansoura University and Ain Shams University) and one site in Toronto (Rothbart Center) joined the project.

Unique Features of the SCIP. The SCIP was designed and tailored from the outset to serve the clinicians' needs in clinical settings, whether inpatient or outpatient. The SCIP is a standard guide to clinicians' diagnostic interviews, and hence the name: the Standard for Clinicians' Interview in Psychiatry (SCIP).

The SCIP allows clinicians the full freedom to administer the interview as they see fit. The SCIP interview starts with the Screening Section followed by the Modular Section. The SCIP Screening Section has questions on anxiety, mood, psychosis, alcohol and substance, somatoform, eating, attention, and hyperactivity. The clinician can start with questions that he or she finds most appropriate. The clinician decides on the episode period that he/she evaluates. After the Screening Section, the clinician chooses the module(s) needed to make the appropriate diagnosis(es). If the clinician decides to explore two or more modules, he or she can start with any module deemed appropriate. There is no structured or semi-structured interview currently available that allows such freedom for the clinician, simply because the SCIP utilizes the full extent of clinicians' expertise in conducting diagnostic interviews. No structured or semi-structured tool can ever replace the clinicians' skills.

The SCIP was designed to produce three types of output: 1) numeric data for symptoms/signs and their severity, 2) dimensional scores for

clusters of symptoms (anxiety, posttraumatic stress, obsessions, compulsions, depression, mania, suicidality, suicidal behavior, delusions, hallucinations, agitation, disorganized behavior, negative symptoms, catatonia, alcohol addiction, drug addiction, attention problems, and hyperactivity), and 3) disorder categories according to the to the *DSM-5* (and later editions) and *ICD-10* (and later editions) criteria.

The building blocks of the SCIP are the enduring symptoms and signs of psychopathology that do not change over time. Whether we have the *ICD-10* or beyond, the *DSM-5* or beyond, the phenomenology of mental disorders remains unchanged and the SCIP will withstand future diagnostic criteria changes. For example, although the SCIP was developed and tested before the *DSM-5* publication in 2013, the SCIP contains the main criteria needed to make the diagnosis of the new *DSM-5* disruptive mood dysregulation disorder (irritable mood, verbal and physical aggression, manic and hypomanic episode). The clinician inquires about the frequency, duration, and onset of temper outbursts and decides whether the patient meets the criteria for the diagnosis of disruptive mood dysregulation disorder.

The SCIP transforms routine clinical information into research data when needed. Psychiatrists evaluate thousands of patients daily. The multitudes of records produced, such as psychiatric evaluations and progress notes, have mainly one primary use—clinical management—as well as several secondary uses—billing, legal issues and research. The SCIP retains the clinical management function and also produces data that can be gleaned for research. If all psychiatric interviews can be seamlessly transformed into research data, the potential value for scientific inquiry would be highly significant.

DESIGN OF THE SCIP QUESTIONS AND OBSERVATIONAL ITEMS

Symptoms of psychopathology. As in the case of medicine, modern psychiatric diagnosis depends on the assessment of psychopathological symptoms and signs. The SCIP interview reflects the "state-of-the-art" assessment of psychopathology and includes questions designed to evaluate symptoms and observational items for the signs of mental illness. The SCIP questions were designed and worded to be simple and easily understood by patients, regardless of their intellectual level. The meaning of the questions and examples were embedded in the questions so that each question and the response reflect the criterion being examined. The *DSM* set the criteria, but never set how to measure them. For example, one of the criteria of major depressive episode is "diminished ability to think or concentrate." Here is the SCIP question and responses:

MB7. Diminished concentration.
Have you found that your concentration has decreased and you are unable to complete a task (e.g., at work, reading an article, reading a book, watching a movie), even though you were able to do that before?
0=Patient has no concentration problems
1=Patient has difficulty concentrating less than half the time
2=Patient has difficulty concentrating more than half the time

The question and responses explain the criterion, give examples of impaired concentration, and measure the severity (less than half the time or more than half the time).

Signs of psychopathology. The SCIP interview includes observational items to assess for signs of mental illness. The signs are defined and described. The interviewer observes and examines the patient and decides on the presence or absence of the sign assessed.

MC21. Derailment.
1. Patient has derailment (looseness of association): speech shifts to different topics, related or unrelated, but eventually comes back to the main topic
2. Patient has severe derailment (severe looseness of association): speech shifts to different topics, mostly unrelated, and never comes back to main topic

Questions with built-in dimensional capabilities. The SCIP questions were designed so that dimensional measures can be generated easily whether the interviewer is using the paper version or the SCIP software. For example, obsession questions cover how many hours per day obsessions occur, how many days per week obsessions occur, and the types of obsessions. Answers to the questions sum to the total dimensional score for obsessions.

OCD1. *Do you have an intrusive thought or image that does not make sense and keeps coming back to your mind even when you try not to have the thought or the image?*
0=Patient has no obsessions.
1=Patient has obsessions less than 1 hour/day.
2=Patient has obsessions 1 to 4 hours/day.
3=Patient has obsessions more than four hours/day.

OCD2. *During a one week period, how many days do you have obsessive thoughts on the average (# of days from 0 to 7)?*

OCD3. Aggressive obsessions.
0=Patient has no aggressive obsessions.
1=Patient has aggressive obsessions.

OCD4. Contamination obsessions (e.g., dirt, germs)
0=Patient has no contamination obsessions
1=Patient has contamination obsessions

OCD5. Sexual obsessions.
0=Patient has no sexual obsessions
1=Patient has sexual obsessions

OCD6. Religious obsessions.
0=Patient has no religious obsessions
1=Patient has religious obsessions

OCD7. Somatic obsessions. (concerned with disease)
0=Patient has no somatic obsessions
1=Patient has somatic obsessions

OCD8. Appearance obsessions.
0=Patient has no appearance obsessions
1=Patient has appearance obsessions

OCD9. Other obsessions.
0=Patient has no other obsessions
1=Patient has other obsessions

DESCRIPTION AND USES OF THE SCIP

The SCIP materials. The materials for the SCIP method of psychiatric assessment include the SCIP interview and the SCIP instruction manual (Appendix A). The SCIP interview contains approximately 230 questions and observational items, including 29 screening questions. The SCIP questions and observational items cover almost every human emotional complaint, symptom, and sign.

The SCIP Interview has four main sections: 1) demographic, social, and history of present illness; 2) screening; 3) medical, family, and psychiatric history; and 4) SCIP modules section.

The SCIP modules section comprises the following:

- Module A1: anxiety, phobia, and panic
- Module A2: obsessive compulsive disorders
- Module A3: posttraumatic stress disorder
- Module B: mood disorders
- Module C: psychotic disorders
- Module D: alcohol and substance use disorders
- Module E: somatic symptom disorders
- Module F: eating disorders
- Module G: attention deficit/hyperactivity disorders
- Module H: adjustment disorders
- Module J: neurocognitive disorders
- Module P: personality disorders.

The 36-page SCIP instruction manual (Appendix A) describes the SCIP method for psychiatric assessment, the SCIP rules for rating symptoms and observational items, and the SCIP guidelines for making diagnoses. It is important to note that neither the *DSM-III* nor its successors specified assessment procedures by which to determine whether criteria are met.[35] The SCIP interview and manual fills this gap. Clinicians with extensive experience in mental health can read and implement the SCIP manual guidelines during psychiatric assessment. No training is required for experienced mental health professionals.

Uses of the SCIP. The SCIP is designed to be used in either clinical or research settings.

Clinical use of the SCIP. The SCIP was designed from the outset to reflect what seasoned, competent psychiatrists do in clinical assessment, as described by the BFTT approach. The SCIP can be viewed as a translation of the language experienced psychiatrists use in performing diagnostic psychiatric evaluations. When a psychiatrist performs an assessment, he or she produces several pages of psychiatric evaluation notes. If the psychiatrist uses the SCIP method, he or she produces a psychiatric evaluation and quantitatively measured symptoms and clusters of symptoms.

The SCIP modules can be used in specialty clinics. Clinicians can use Module B in a mood disorder clinic, Module C in a thought disorder clinic, and so on. The use of the SCIP for longitudinal evaluation of patients becomes even more important and more valuable because the clinician can easily track how the dimension score changes over time. For example, the changes in the depression dimension score over time can show the efficacy of antidepressant medications and/or psychotherapy in treating patients with depression.

Research use of the SCIP. The SCIP was designed for research use in addition to clinical use. Because the SCIP questions measure meaningful clinical changes, the SCIP dimensional scores can show whether the patient has made clinically significant improvements. The SCIP screening questions and the SCIP modules can be used in some epidemiological studies depending upon the study questions, goals, design, and other factors.

Users of the SCIP: qualifications and training. Psychiatrists and experienced mental health professionals such as clinical psychologists, clinical social workers, mental health counselors and researchers can use the SCIP. Mental health professionals should A) have at least two years of inpatient or outpatient experience; B) be able to conduct independent diagnostic interviews with patients; C) be very knowledgeable about *ICD* and *DSM* diagnostic criteria; and D) be very familiar with the SCIP questions and the SCIP instruction manual (Appendix A). No training is required for experienced mental health professionals.

Psychiatrists have medical skills that enable them to discern the effects of medical conditions on psychiatric presentations. Other mental health professionals who lack medical skills training can use the SCIP. However, in certain conditions where medical problems complicate psychiatric presentations, clinicians without medical training should consult psychiatrists or medical personnel.

Translation of the SCIP. The SCIP was translated first into the Arabic language by two psychiatrists at Mansoura University and Ain Shams University in Egypt. The Arabic SCIP was reviewed by the SCIP author, who is fluent in both English and Arabic, to make sure

that the Arabic SCIP was an accurate translation of the original English SCIP. Using a similar process, the SCIP was translated into Spanish, Hindi, and Mandarin by clinicians who were fluent in both English and the translated language. The translated Spanish, Hindi and Mandarin versions of SCIP were reviewed by independent clinicians who were fluent in both English and the translated language to make sure that the translated SCIP was an accurate translation of the original English SCIP. The translation of the SCIP will be updated formally with backward and forward translations.

OUTPUT FROM THE SCIP

The SCIP produces three types of output: 1) symptoms and observational items along with their severity, 2) dimensional scores for symptom clusters, and 3) psychiatric diagnoses.

The SCIP generates the following dimensional scores: anxiety (0–7), posttraumatic stress (0–21), obsessions (0–17), compulsions (0–17), depression (0–38), mania (0–21), suicidality (0–36), suicidal behavior (0–13), delusions (0–23), hallucinations (0–19), disorganized behavior (0–13), agitation (0–11), negative symptoms (0–12), catatonia (0–16), alcohol addiction (0–15), drug addiction (0–13), attention problems (0–12) and hyperactivity (0–12).

The SCIP generates the following diagnoses:

- Module A (anxiety disorders): panic disorder, agoraphobia, social phobia, specific phobia, generalized anxiety disorder, obsessive-compulsive disorder, and posttraumatic stress disorder
- Module B (mood disorders): major depression, dysthymia, bipolar I and II, cyclothymia, suicidality, and suicidal behavior
- Module C (psychotic disorders): schizophrenia, schizophreniform disorder, schizoaffective disorder, delusional disorder, and brief psychotic disorder
- Module D (substance use disorders): alcohol and drug use disorders
- Module E: somatic symptom and unspecified somatic symptom disorders
- Module F (eating disorders): anorexia nervosa, bulimia nervosa, and binge-eating disorders
- Module G (attention deficit hyperactivity disorder)
- Module H (adjustment disorders)
- Module J (neurocognitive disorders)
- Module P (personality disorders)

The SCIP study[40,41] is considered an important study in the psychiatric literature as it has achieved the following:

1. One thousand and four subjects were interviewed in three countries and generated 1,419 SCIP interviews that were used in calculating validity and reliability indices. The SCIP study is the largest validity and reliability study of a diagnostic assessment tool.
2. The SCIP study measured a stable Kappa for 150 symptoms and signs of psychopathology. No other study in the literature has achieved this.
3. The SCIP study measured Cronbach's alpha for 14 dimensions covering important areas of psychopathology (anxiety, posttraumatic stress, depression, mania, delusions, hallucinations, Schneider's first-rank symptoms, disorganized thoughts, disorganized behavior, negative symptoms, alcohol addiction, drug addiction, attention problems and hyperactivity).

THE SCIP AND FUTURE RESEARCH

Experimental psychopathology research. Inspired by Berrios's classification of psychopathology (descriptive, experimental and psychodynamic),[2] psychopathology can be expanded as follows:

- *Qualitative psychopathology (descriptive, phenomenological): focus on the form of symptoms.* Examples: types of hallucinations (e.g., auditory and visual), types of delusions (e.g., paranoid, somatic, grandiose).
- *Quantitative (numerical) psychopathology: assigning numbers to symptoms and signs.* Example: duration of auditory hallucination—1=less than one hour, 2=1 to 4 hours, and 3=more than four hours per day. Quantitative psychopathology is useful in measuring severity of symptoms, efficacy of treatment, hypothesis testing, and other research inquiries.
- *Etiological psychopathology: focus on the causes of symptoms.* Example: Are auditory hallucinations due to PTSD or a brain tumor?
- *Experimental psychopathology: the study of the relationship between the psychopathology of an individual and objective measures.* Examples: thyroid hormone level, medication blood level, structural imaging (CT, MRI), functional imaging (fMRI), positron emission tomography (PET), single photon emission tomography (SPECT), molecular imaging (magnetic resonance spectroscopy [MRS]), genomics, pharmacogenomics, biomarkers, endophenotypes, epigenetic modifications, genetic variants, translational neuroscience technologies, or any newly developed techniques or blood tests.

Measuring psychopathology reliably at the level of individual symptoms and signs and correlating them with the brain changes *in vivo* is the best hope to unravel the causes of mental disorders. Uncovering the biological bases of individual symptoms may prove to be as helpful or more helpful than studying

ID#	Date of DPC	Date of birth	Sex	SS1	… …						SS15			SS29
XXX	June 7, 2007	XX/XX/ 1967	2	0							2			0

MA1_ panic	…	…	MA12_compulsion	MB1_depression	…									
0			0	0										

MC_1	MC_2	MC_3	MC_4	MC_5	MC_6	MC_7	MC_8	MC_9	…….
0	0	0	0	0	0	0	0	0	

MC_19	MC_20	MC_21	MC_22	MC_23	…	MC_28	Delusions score	SCIP Diagnosis
2	2	2	0			1	7	300

FIGURE 1. Example of the DPC of a real patient diagnosed with a schizophrenia spectrum in the SCIP study

constellations of symptoms (syndromes) in order to understand the pathophysiology of the illness.[45] The SCIP measured kappa for 178 symptoms and signs and provided a framework of experimental psychopathology for adult psychiatry.

Personalized psychiatry. Personalized psychiatry is the science of systematic use of individual unique characteristics across four domains: life story, environmental factors, psychopathology assessment, and translational neuroscience findings (e.g. brain imaging, genomics, pharmacogenomics, biomarkers, endophenotypes, or any newly developed technique or blood test) to guide the clinician toward a person-centered diagnosis, person-centered prognosis, person-centered therapeutics (personalized selection and personalized dosing of medications), improving the outcome of the disease, and eventually the prevention of disease.

Individualized psychopathology assessment is one of the core components of personalized psychiatry. The SCIP Descriptive Psychopathology Code (DPC) and Descriptive Psychopathology Map (DPM) form the basis of individualized assessment.

The descriptive psychopathology code (DPC) is a comprehensive psychological assessment (symptoms, signs, and dimensions) of an individual at one point in time, conducted by a clinician using the SCIP methodology.

Descriptive psychopathology map (DPM). DPM is two or more descriptive psychopathology codes (DPCs) obtained over time by the same or different clinicians. Characteristics of DPC include the following:

1. The DPC is the equivalent of a fingerprint of the mind of an individual at one point in time.
2. Each individual can have multiple descriptive psychopathology codes (DPCs) as the individual is assessed at different times by the same or a different clinician.
3. The DPC of an individual is constant at one point in time and is dynamic over time as symptoms and signs abate with treatment and new symptoms and signs emerge.
4. If the individual has no symptoms, all of the DPC items are zeroes except for ID#, date of evaluation, date of birth, and sex.

Figure 1 is an example of the DPC of a real patient diagnosed with a schizophrenia spectrum in the SCIP study. If a researcher or a clinician reviewed the DPC of the patient in Figure 1 today, he or she could conclude that on June 7, 2007, the patient was a 40-year-old woman and, upon screening, admitted to having paranoid delusions (SS15=2). The patient had full paranoid, persecutory, and conspiracy delusions (MC19, MC20, and MC21), and her delusions were bizarre (MC28). The patient's delusions dimension score was 7, and she was diagnosed with schizophrenia spectrum.

Research Domain Criteria (RDoC) framework. The SCIP symptoms, signs, and dimensions are in line with the RDoC framework. The current research depends heavily on the *DSM* and *ICD* diagnostic categories, which lack validity and do not create homogeneous populations.[46–50] For example, the *DSM-5* diagnostic criteria for schizophrenia spectrum do not identify homogeneous populations, and patients with different presentations satisfy the official criteria. Not surprisingly, decades of research in clinical neuroscience and genetics have failed psychiatry.[51,52] Consequently, the National Institute of Mental Health (NIMH) initiated the Research Domain Criteria (RDoC) project in 2008. RDoC moves away from the constraints of the *DSM/ICD*

categories and focuses on new ways of classifying mental disorders based on empirical data from genetics, neuroscience, and dimensions of observable behavior.[53,54] The NIMH workgroup developed a two-dimensional matrix of five major domains of functioning (five rows) and seven units of analysis (seven columns). Symptoms, signs and dimensions are important units of analysis in the matrix. The symptoms, signs and dimensions measured by the SCIP fit well with RDoC. The RDoC project represents a major paradigm shift in psychiatric classification, so researchers and clinicians will experience a major transition (both conceptually and practically) from *ICD/DSM* categorical systems to the new RDoC.[54] Because the SCIP produces categorical diagnoses in addition to dimensions, the SCIP is positioned to be the right assessment tool in the transition period toward RDoC.

CONCLUSION

The SCIP is reliable and valid diagnostic interview, is compatible with experimental psychopathology and personalized psychiatry research, and is in line with the NIMH RDoC framework.

The SCIP Instruction Manual (Appendix A) is also available for download by visiting http://innovationscns.com/wp-content/uploads/SCIP_Instruction_Manual_2015.pdf.

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Appendix A. Standard for Clinicians' Interview in Psychiatry instruction manual (Also available for download via http://innovationscns.com/wp-content/uploads/SCIP_Instruction_Manual_2015.pdf

INSTRUCTION MANUAL

For The

Standard for Clinicians' Interview in Psychiatry (SCIP)

Ahmed Aboraya, MD, Dr.PH: author and copyright holder of the SCIP

Introduction

The Standard for Clinicians' Interview in Psychiatry (SCIP) is a method of assessment of psychopathology, administered by psychiatrists or clinicians with extensive experience and knowledge about mental health and the diagnostic criteria for mental disorders. Although several structured and semi-structured interviews exist in the psychiatric literature (1-4), none of them is designed to be used by psychiatrists in the real world of psychiatric practice (5, 6). To remedy this serious gap, Dr. Aboraya has developed the Standard for Clinicians' Interview in Psychiatry (SCIP), the only instrument designed explicitly to meet psychiatrists' needs in real clinical practice, whether inpatient or outpatient (7-20). The SCIP symptoms, signs, dimensions and diagnoses were tested in an international multisite study in three countries (USA, Canada and Egypt) between 2000 and 2012 and have been shown to be reliable and valid (21, 22). The total sample size, including all sites, was 1,004 subjects, making the SCIP project the largest validity and reliability study of a diagnostic interview in psychiatry.

The SCIP is an exemplary reference guide for psychiatric assessment and includes the SCIP interview and the SCIP manual. Clinicians develop their own style of interviewing, shaped by mentors, experience and other various factors, and no tool can change that. As clinicians follow the SCIP method of psychiatric assessment, they can

use the SCIP questions (which have been shown to be reliable) and follow the SCIP rules of rating symptoms and signs. Clinicians use the patient's responses to questions, observe the patient's behavior and utilize proxy information such as chart review to make the final rating on the presence or absence of psychopathological symptoms and signs. It is the clinician's judgment, not the patient's responses, that prevails.

The SCIP method of psychiatric assessment has three components: the SCIP interview (dimensional) component, the etiological component and the disorders classification component. The SCIP yields three types of output: a diagnostic classification of the disorder, dimensional scores and numeric data. The SCIP provides diagnoses according to the Diagnostic and Statistical Manual (DSM) and International Classification of Disease (ICD) criteria. A dimensional score is provided for the following types of psychopathology: anxiety, posttraumatic stress, obsessions, compulsions, depression, mania, suicidal behavior, self-injurious behavior, delusions, hallucinations, agitation, disorganized behavior, negative symptoms, catatonia, alcohol addiction, drug addiction, attention and hyperactivity. The SCIP produces numeric data for psychopathological symptoms and signs that can be used for research.

SCIP Advantages

1. The SCIP interview takes the same amount of time as a typical psychiatric diagnostic interview (25-40 minutes), allows clinicians to maintain therapeutic rapport with patients and does not require training.
2. The SCIP is flexible and allows clinicians the freedom to administer the interview as they see fit. The SCIP interview starts with the Screening Section followed by the

Modular Section. The SCIP Screening Section has questions on anxiety, mood, psychosis, alcohol and substance, somatoform, eating, attention and hyperactivity. The clinician can start with any question that he/she finds most appropriate. The clinician decides on the episode period to evaluate. After the Screening Section, the clinician chooses the module(s) to make the appropriate diagnosis (es). If the clinician decides to explore two or more modules, he/she can start with any module as deemed appropriate. No other structured or semi-structured interview currently available allows such freedom for the clinician, simply because the SCIP utilizes the full extent of clinicians' expertise in conducting diagnostic interviews. No structured or semi-structured interview can ever replace clinicians' skills.

3. The SCIP is the only instrument designed to produce three types of output: numeric data for symptoms/signs and their severity, dimensional scores for clusters of symptoms (anxiety, posttraumatic stress, obsessions, compulsions, depression, mania, suicidal behavior, self-injurious behavior, delusions, hallucinations, agitation, disorganized behavior, negative symptoms, catatonia, alcohol addiction, drug addiction, attention and hyperactivity) and disorder categories according to the to the Diagnostic and Statistical Manual (DSM) and International Classification of Disease (ICD) criteria.

4. The building blocks of the SCIP are the symptoms and signs of psychopathology that do not change with time. Whether we have the ICD-10 or beyond, DSM-5 or beyond, the phenomenology of mental disorders remains unchanged and the SCIP will withstand future diagnostic criteria changes. For example, although the SCIP was developed and tested before the DSM-5 publication in 2013, the SCIP contains the main criteria needed to make the diagnosis of the new DSM-5 disruptive mood dysregulation disorder

(irritable mood, verbal and physical aggression, manic and hypomanic episode). The clinician inquires about the frequency, duration and onset of temper outbursts and decides whether or not the patient meets the criteria for the diagnosis of disruptive mood dysregulation disorder.

5. The SCIP is the only instrument that transforms routine clinical information into data that can be used for research. Psychiatrists evaluate thousands of patients daily. The multitudes of records produced daily, such as psychiatric evaluations and progress notes, have mainly one primary use: clinical management, as well as several secondary uses: billing, legal issues and research. The SCIP retains the clinical management function and also produces data that can be gleaned for research. If all psychiatric interviews were transformed into research data, the potential value for scientific inquiry would be significant.

The SCIP Approach to Psychiatric Diagnosis: "Bottom First Then Top (BFTT)" Approach

Two approaches to psychiatric diagnosis have been described in literature: the "top-down" approach and the "bottom-up" approach (2, 4, 23-25). In the top-down approach, exemplified by the Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I), questions are grouped by diagnosis and criteria; within each diagnosis, if a required criterion is not met, the interviewer skips the remaining questions assessing the other criteria for that diagnosis. For example, if the patient denies depressed mood and anhedonia, the SCID-I instructs the interviewer to skip the remaining questions for the diagnosis of major depression (2). The top-down approach leads to efficient interviews by focusing on diagnoses, facilitates clinical communication and improves reliability. On the other hand, diagnostic interviews based upon top-down approach are biased toward preconceived diagnostic criteria, lack validity, may result in the loss of important information and need to be updated every time the diagnostic system changes. With the publications of DSM-5 in May 2013, the SCID-I requires major changes to be compatible with the new DSM-5 version. Using the bottom-up approach, as exemplified by Schedules for Clinical Assessment in Neuropsychiatry (SCAN), the interview is based upon comprehensive assessment of symptoms without consideration of possible diagnoses (4). After symptoms assessment, algorithms are used to make psychiatric diagnoses. The bottom-up approach has the advantages of avoiding biases toward preconceived diagnoses and can survive diagnostic criteria changes. However, bottom-up approach leads

to lengthy interviews and may lack the precision needed to fulfill diagnostic criteria (25).

The SCIP method to psychiatric diagnoses is better described as **"Bottom First Then Top (BFTT)" approach.** An ideal diagnostic psychiatric interview starts with a bottom-up approach: the psychiatrist establishes rapport with the patient and inquires about chief complaint(s) and history of the present illness. The patient is allowed to take the lead first and express feelings, thoughts, current stressors and other problems. The psychiatrist continues the bottom-up approach by obtaining a detailed life history, screening for symptoms, examining mental status, exploring potential causes of symptoms and utilizing records and informants as needed. As the psychiatrist narrows down the potential diagnoses, the top-down approach takes over. The psychiatrist checks the symptoms and decides whether or not the patient meets the diagnostic criteria of a disorder. The SCIP reflects the BFTT approach of psychiatric assessment through its three components: the SCIP interview component and the etiological component are both mainly bottom-up approaches, and the disorders classification component is mainly a top-down approach.

The BFTT approach avoids biases toward preconceived diagnoses by starting with comprehensive symptoms assessment. For example, during the screening part of questioning, the patient may deny depressed mood, anhedonia, euphoric mood, irritable mood, labile mood or any mood swings. However, the interviewer may observe and collect collateral data to indicate mood problems (e.g. pressured speech, impulsive behavior or past suicidal attempts). In this case,

the interviewer proceeds to the mood module and explores manic and depressive symptoms and signs. The SCIP is an efficient interview because it utilizes the clinicians' skills and expertise to guide to valid diagnoses. For example, during the first five minutes of an interview, the patient explained to the psychiatrist with conviction that he was born on Mars and brought to earth by aliens on a spaceship. The patient was waiting in the hospital to be rescued and to go back to where he belongs: Mars. The patient was clearly responding to internal stimuli and a quick review of his history indicated multiple psychiatric admissions for similar circumstances. The psychiatrist explored module C and the patient met the diagnostic criteria for schizophrenia. The SCIP relies on the algorithm of the human mind (clinician's expertise and knowledge) to conduct efficient interviews. No paper or computer algorithms can match the algorithm of the human mind. Seasoned, competent psychiatrists have actually used the BFTT approach for decades, even though the term BFTT was coined first in the SCIP reliability paper (21). Michael B. First's recent "DSM-5 Handbook of Differential Diagnosis," describing 29 bottom-up decisions trees leading to diagnoses based upon DSM-5 criteria, actually follows a BFTT approach (26). ***The motto of the BFTT approach is to understand the patient first, then make a diagnosis.***

The SCIP Method of Psychiatric Assessment

The SCIP method of psychiatric assessment reflects a typical psychiatric evaluation conducted by psychiatrists and clinicians in different settings (inpatient, outpatient or day hospital) and has three components: the SCIP interview, the etiological search and the disorders classification.

A. The SCIP interview (dimensional component): This is the psychiatric interview with the patient and has three phases. See the SCIP interview and Appendix I for instruction on rating the responses to the SCIP questions.

B. Etiological search (etiological component): As the clinician conducts the interview, he/she explores the potential causes of symptoms. If the patient has depression and drinks alcohol, the clinician explores whether depressed mood is secondary to alcohol or whether the patient has a dual diagnosis (e.g. alcohol use disorder and major depression). As medical conditions affect psychiatric presentations, a psychiatrist uses medical knowledge and clinical skills to decide whether any medical conditions might have caused or exacerbated psychiatric symptoms. For a mental health professional who lacks medical training (such as a psychologist or a clinical social worker), he/she can consult with medical personnel if medical conditions are affecting psychiatric presentations and vice versa. See Appendix II outlining causal specifiers and Appendix III for certainty of causal specifiers.

C. Disorders classification (categorical component): The clinician evaluates whether the symptom or cluster of symptoms causes significant distress (see Appendix IV) or functional impairment (see Appendix V). Finally, the clinician utilizes all of the

information available to decide whether the patient meets the criteria for a psychiatric disorder(s) based on the DSM or ICD criteria.

A. The SCIP INTERVIEW

(DIMENSIONAL COMPONENT)

I: Phases of Psychiatric Interview: The SCIP interview reflects the type of psychiatric interview typically conducted by psychiatrists and clinicians and has three phases.

Phase one (5-10 minutes): The clinician greets the patient, introduces himself/herself and asks the patient basic demographic questions (age, marital status, education, occupation and living arrangements). The clinician asks about the chief complaint(s) and allows the patient to take the lead by describing the history of the present illness and any recent stressor(s). The clinician observes and listens to the patient, allowing for good rapport to be established, and may write brief notes. When a symptom is absent, it is left blank in the paper version of the SCIP interview. Similarly, in the computer version of the SCIP, the default rating is zero. This way, the clinician gives most of his/her attention to the patient in order to maintain good rapport.

Phase two (10-15 minutes): At the beginning of this phase, the clinician should have a good idea about the main problem(s) of the patient. The clinician takes the lead and asks screening questions covering the main domains of psychopathology. The SCIP has screening questions on anxiety, mood, psychosis, alcohol, drugs, somatoform, eating, attention and hyperactivity. There is no specific order for the screening questions. The clinician may choose the order of questions that allows the interview to flow smoothly and maintains a good rapport with the patient. For example, if the patient's main symptom is depressed mood, it is wise to start with the moods questions and inquire more about anhedonia, elevated mood and mood swings. Then the clinician can screen for anxiety and psychosis. Another example: if the patient's main problem is alcohol or drug

use, it is wise to start with the alcohol and drug questions and get relevant information as to the extent of the substance use problem. The clinician inquires about a time when the patient was sober for a reasonable amount of time and screens for anxiety, mood and psychosis during the time of sobriety. Another example: if the patient appears from the onset to be psychotic, disorganized and responding to internal stimuli, the clinician may proceed with module C (Schizophrenia and Psychosis). For this patient, the clinician may skip anxiety and somatoform questions because the patient is too disorganized to provide any valid information. In summary, there are no rules or specific order to be followed in this phase. The clinician utilizes his/her clinical skills, aided by the SCIP screening questions, to detect any abnormal psychopathology. It is important to remember that the SCIP screening questions represent a review of the main psychopathological domains of adults. It is also important for the clinician not to miss any important areas of psychopathology in this phase. Finally, symptoms found to be present during this screening phase can be used for diagnosis of psychiatric disorders.

Phase three (10-15 minutes): By this phase of the interview, the clinician should have determined potential diagnostic possibilities. The clinician decides which module(s) to use and explores the specific symptoms of the disorder(s) in detail. Depending on the patient, the clinician may explore one or several modules. The SCIP has the following modules: Module A: Anxiety, Panic and Posttraumatic Stress Disorders, Module B: Mood Disorders, Module C: Psychotic Disorders, Module D: Alcohol and Substance-Use Disorders, Module E: Somatoform Disorders, Module F: Eating Disorders, Module G: Attention Deficit Disorders, Module H: Adjustment Disorders, Module J: Memory Disorders and Module P: Personality Disorders.

During this phase, the clinician determines whether the symptoms cause significant distress or impairment of function. Finally, the clinician determines whether the patient does or does not have a psychiatric disorder(s) and initiates treatment planning.

It is important to know that sequence of the three phases described above does not have to be followed in that order. Many psychiatrists like to start with asking patients about the chief complaint(s) and history of present illness at the beginning of the interview and the demographic information comes later as the interview proceeds. Many psychiatrists do phases two and three together. For example, if the patient describes depressed mood, the interviewer follows up by asking about depressive symptoms (anhedonia, hopelessness, suicidal thoughts and plans, etc.). Similarly, if the patient reports abuse, the interviewer asks about posttraumatic stress symptoms (bad dreams, nightmares, flashbacks, etc.). The technique of doing phases two and three simultaneously makes the interview proceeds smoothly with a natural progression and helps to maintain good rapport with the patient. Finally, the interviewer is free to perform the interview as he/she prefers.

II: The SCIP Interview has four main sections in this sequence:

1. **Demographic, Social and History of Present Illness Section.**
2. **Screening Section.**
3. **Medical, Family and Psychiatric History Section.**
4. **SCIP Modules Section.**

III: Rating of Responses to Questions:

1. Episodes:

Questions are asked regarding a specific period (past week, past month, past year, etc.). The interviewer decides on the specific time frame for the questions and modules. The interviewer may choose the past month when evaluating mood, the past year when evaluating alcohol and so on.

2. Principles of coding psychiatric symptoms and signs:

The general principle is to code 0 for absent or subclinical symptoms. Clinical symptoms are coded 1 or 2 or 3.

Many questions have the following codes:

0 = Absent or non-significant.

1 = A symptom is present less than 50% of the time or less than 50% of times. ***The mere presence of a symptom does not qualify for a rating of one. To receive a rating of one, a symptom must be more than what a normal person would experience, or cause at least some distress, or force the patient to seek professional help.***

2 = The same as a rating of one. In addition, the symptom is present more than 50% of the time or more than 50% of times.

9 = Missed question, the patient refused to answer the question or the interviewer was unsure.

Example: Hopelessness	Kappa
Have you felt hopeless about your future? 0 Patient has no feelings of hopelessness. 1 Patient feels hopeless less than half the time. 2 Patient feels hopeless more than half the time.	0.82

Many questions have ratings of 0 (absent or subclinical symptom) and 1 (clinical symptoms).

Example: PANIC ATTACKS WITHOUT PHOBIA	kappa
Have you gotten suddenly anxious and frightened for a short period of time (up to 60 minutes)? **During that time, did you feel that your heart was racing or pounding, or did you start shaking or sweating, or did you feel you were choking?** 0 Patient had no panic attacks. 1 Patient had panic attacks.	0.92

Several questions have possible responses of 0 (absent or subclinical), 1, 2 and 3 to allow for severity measurement and to generate a valid dimensional score when added to responses from other questions.

Example: Frequency of auditory hallucinations	kappa
How often do you hear any noises (like music, whispering sounds) or voices talking to you when there is no one around? 0 No auditory hallucination 1 1-4 days / month 2 5-14 days / month 3 15-30 days / month	0.93

3. Symptoms of psychopathology:

As in case of medicine, modern psychiatric diagnosis depends on the assessment of psychopathological symptoms and signs. The SCIP interview reflects a state-of-the-art approach to assessment and includes questions designed to evaluate symptoms and observational items for the signs of mental illness. The SCIP questions were designed with four principles:

a. Questions are worded to be simple and easily understood by patients regardless of their intellectual level.
b. Questions simulate what seasoned psychiatrists usually ask.
c. The meaning of the questions and examples are embedded in the questions so that each question and the response reflect the criterion being examined.
d. Questions' responses have the least subcategories and reflect the clinical significance of the symptom. The fewer the subcategories reflecting symptom severity, the more efficient the interview, and the more likely that clinicians will use the questions.

For example, one of the criteria for a major depressive episode is "diminished ability to think or concentrate." Here is the SCIP question and possible responses:

Example: Loss of concentration	kappa
Have you found that your concentration has decreased and you are unable to complete a task (e.g. at work, reading an article, reading a book, or watching a movie), even though you were able to do that before? 0 Patient has no concentration problems. 1 Patient has difficulty concentrating less than half the time. 2 Patient has difficulty concentrating more than half the time.	0.80

The question and responses explain the criterion, give examples of impaired concentration and measure the severity (less than half the time or more than half the time).

4. Signs of psychopathology:

The SCIP interview includes observational items to assess for the signs of mental illness. The interviewer listens to the patient, asks him/her questions, examines the patient and rates the observational items.

Some observational items have questions. For example, the interviewer observes the patient's speech and can ask about pressured speech over a specific period of time.

Example: Pressured speech	kappa
Have you been talking faster than usual during that time (examples: people said that they were unable to understand you because you were speaking too fast or you felt a pressure to continue talking)? 0 Patient has normal speech. 1 Patient has pressured speech less than half the time. 2 Patient has pressured speech more than half the time.	0.72

Some observational items need examination by the interviewer, as in catatonia. The interviewer observes the patient, tests for mobility, rigidity, catalepsy and waxy flexibility, and rates catatonia items.

Catalepsy: Patients maintain any odd or unusual posture the interviewer places them in.

0 Patient has no catalepsy.
1 Patient has catalepsy:

Waxy flexibility: Patient maintains a limb in a certain position. When the interviewer moves the limb, the limb feels as if it were made of wax.

0 Patient has no waxy flexibility.
1 Patient has waxy flexibility.

Some observational items are described and observed.

Flight of Ideas (a combination of pressured speech and derailment):	kappa
0 Patient has no flight of ideas. 1 Patient has flight of ideas.	0.62

Apparent hallucinatory experiences:		Kappa
0	Patient has not been observed talking to self.	0.55
1	Patient has been observed talking to self, talking to a mirror, or running a conversation with unseen person.	

DISORGANIZED THOUGHTS

1 Patient has derailment (looseness of association): speech shifts to different topics, related or unrelated, but eventually comes back to the main topic.
2 Patient has severe derailment (severe looseness of association): speech shifts to different topics, mostly unrelated and never comes back to main topic.
3 Patient has flight of ideas: a combination of pressured speech and derailment.
4 Patient has tangentiality: replying to a question is related in some distant way or totally unrelated.
5 Patient has incoherent speech: first sentence is unrelated to the next sentence. Each sentence on its own makes sense.
6 Patient has word salad speech: incoherence of speech at the level of the sentence, that is, the first word has nothing to do with the second word.
7 Patient has illogical speech: conclusion of speech is not logical.

8 Patient uses neologisms.

5. General Notes on Ratings:

a. Do not over-rate symptoms. If the symptom is present and the clinician is not sure whether to rate 1 or 2, the code should be 1. If the clinician asks and decides the patient has concentration problem but he/she forgot to ask about the duration, the code should be 1 and not 2.

b. A symptom rated 1 will qualify for diagnostic criteria.

c. If the clinician is not sure whether the symptom is present after a thorough questioning, the clinician can make a judgment call about whether the symptom is present or absent. If the clinician does not feel comfortable making a decision, he/she can choose the rating of 9. A written explanation by the clinician is advised in these cases.

6. Special Notes on Delusions:

Delusions are ideas that have the following criteria:

a. The idea is false based on what most people of the same culture know (false idea).

b. The patient is convinced that the idea is true (firm idea).

c. If the patient is provided with evidence that contradicts the idea, the patient is still convinced that the idea is true (fixed idea).

If the patient has paranoid delusions less than half the time, the rating is one. If the patient has paranoid delusions more than half the time, the rating is two. Typically, a patient with delusions goes through three phases:

a. Initial partial delusions: This is the transition from normal thoughts to delusional thoughts. The delusional thoughts gradually occupy some of the patient's time. As time goes on and the patient receives no treatment, the delusional thoughts occupy more of the patient's time.

b. Full delusions: This is when the delusions occupy most or the entirety of a patient's time. Typically, when patients are admitted to hospitals, they have full delusions.

c. Residual partial delusions: As the patient receives antipsychotic medications and improves, the patient starts to question his/her delusional thoughts. The delusional thoughts occupy less and less of the patient's time. Eventually, the delusional thoughts disappear.

The SCIP Principles of Creating Reliable Psychological Dimensions

The SCIP study measured Kappa for 150 psychological symptoms and signs including 28 SCIP screening questions. Ninety six percent of the SCIP items had fair to good reliability (Kappa => 0.5). Based upon reliable SCIP items, the SCIP dimensions were created. The SCIP questions were designed so that dimensional measures can be generated easily whether the interviewer is using the paper version or the SCIP software.

The SCIP method of creating reliable and clinically relevant dimensions was based upon the following 9 principles:

1. **Reliable dimensions require reliable symptoms and signs.** Psychological symptoms and signs are the building blocks of psychological dimensions. The SCIP study confirmed the hypothesis that reliable psychological dimensions require reliable symptoms and signs. The absence of valid and reliable symptoms was the main limiting factor in creating dimensional measures in the past (27). The SCIP reliable symptoms and signs removed this major obstacle. Based upon reliable SCIP items, the SCIP dimensions were created and have shown to be reliable (21).
2. **Each item is given one score, regardless of the number of questions exploring the item.** Typically, a SCIP item is assessed with one question. The question has embedded examples, if needed, so that each question and the response reflect the criterion being examined. Sometimes, one criterion needs to be assessed using several questions. In that case, even if the patient responds yes to several questions evaluating the criterion, the score is the same as if the criterion were measured with one question.

For example, the symptom of suicidal ideations can be assessed by the following eight questions:

Have you had thoughts of suicide?
Have you had thoughts of ending your life?
Have you had thoughts about killing yourself?
Have you had thoughts of wishing to be dead?
Have you had thoughts that life is not worth living?
Have you had thoughts that you would not care if you didn't wake in the morning?
Have you had thoughts the world is better off without you?
Have you had thoughts you would be better off dead?

If the patient responds yes to the first four questions, these questions still only reflect one criterion: suicidal ideation.

3. **Dimensions are built upon significant symptoms and signs.** Absent or mild symptoms are coded "0" in the SCIP.
4. **The principle of least subcategories of symptom severity (LSSS):** Symptom severity subcategories should be used sparingly and reflect the symptom's clinical significance. The symptom of panic attacks can be assessed as absent or present (0, 1). The symptom of poor concentration in a patient with depression can be assessed as absent, less than half the time and more than half the time (0, 1, 2). It is important to know how much of the time the concentration problem is present because it may affect the patient's functioning at work or in school. The fewer the subcategories reflecting symptom severity, the more efficient the interview, and the more likely that clinicians will use the questions. If there are too many unnecessary subcategories of symptoms severity, reliable and clinically useful dimensions cannot be created. For example, the Positive and Negative Syndrome Scale (PANSS) has seven subcategories: absent, minimal, mild, moderate,

moderate severe, severe and extreme (28). For clinicians, the differences between minimal and mild, moderate and moderate severe, severe and extreme are not useful or relevant. Not surprisingly, psychiatrists do not use the PANSS in clinical settings (29).

5. **The frequency of symptoms:** The more frequent the symptom, the higher the score on the item. A good example is the frequency of auditory hallucinations:

   How often do you hear noises (like music, whispering sounds) or voices talking to you when there is no one around?

   0 Patient has no auditory hallucinations.
   1 Patient has auditory hallucinations (1-4 days / month).
   2 Patient has auditory hallucinations (5-14 days / month).
   3 Patient has auditory hallucinations (15-30 days / month).

6. **The duration of symptoms:** The longer the duration of a symptom, the higher the score on the item.

   Do you have an intrusive thought or image that does not make sense and keeps coming back to your mind even when you try not to have the thought or the image?

   0 Patient has no obsessions.
   1 Patient has obsessions less than 1 hour/day.
   2 Patient has obsessions 1-4 hours/day.
   3 Patient has obsessions more than 4 hours/day.

7. **The recency of a symptom:** More recent behavior has a higher score than distant behavior. For example, in response to the timing of suicidal ideation question:

   Have you ever had thoughts of suicide?

0 Patient has never had suicidal ideation.
1 Patient had suicidal ideation in past, but not in the past three months.
2 Patient had suicidal ideation during the past three months (excluding past week).
3 Patient had suicidal ideation during the past week.

Suicidal thoughts during the past week receive a score of 3, past three months receive a score of 2, and if the patient has had suicidal thoughts before the past three months, this receives a score of 1. A patient with suicidal thoughts during the past week, past 3 months and past year receives a score of 6.

8. **The quality of symptoms:** Certain qualities of some symptoms increase the score on the item. For example, auditory hallucination with and without commands.

   Do you hear noises (like music, whispering sounds) or voices talking to you when there is no one around?

   0 Patient has no auditory hallucinations.
   1 Patient has auditory hallucinations.
   2 Patient has auditory hallucinations with command.

9. **Summation Principle:** The total score of a dimension is the summation of symptom presence, recency, frequency, duration and quality.

APPENDIX I

Rating Responses to SCIP questions

Unless otherwise specified in the question, the rating of a symptom is as follows:

CODES:

0 = Absent or non-significant

1 = Symptom present < 50% of the time or <50% of times

2 = Symptom present > 50% of the time or >50% of times

A positive rating of 1 implies that the patient has the symptom more than most people, or has at least some distress or seeks professional help.

9=missing data, or unsure unless otherwise specified in the question.

Many questions have the rating of 0 or 1 as follows:

CODES:

0 = Absent or non-significant

1 = Symptom present

A positive rating of 1 implies that the patient has the symptom more than most people, or has at least some distress or seeks professional help.

9=missing data, or unsure unless otherwise specified in the question.

B. ETIOLOGICAL ASSESSMENT

(ETIOLOGICAL COMPONENT)

The psychiatrist explores potential causes of psychopathology and uses medical knowledge and clinical skills to decide if any specific medical condition has caused or exacerbated psychiatric symptoms. The SCIP method of psychiatric assessment does not exclude any particular school of thought. A clinician is welcome to use any theory or theories to elucidate the causes of mental disorders, as long as the clinician has scientific data to support those theories. Appendix II (causal specifiers of mental disorders) covers a wide range of factors that may cause or contribute to manifestations of mental disorders. Causal specifiers include definite etiopathies and factors contributing to the manifestation of the mental disorder (contributing factors) (30, 31).

Definite Etiopathy (DE): Definite etiopathy is a factor that is determined to be the cause of a mental disorder. For example, a 45-year-old lawyer with no psychiatric problems sustains a head trauma in a car accident. The MRI after the car accident shows a subdural hematoma. A mental status evaluation and neuropsychological testing show significant memory deficits. The final diagnosis is amnestic disorder due to head trauma. The head trauma or the subsequent subdural hematoma is a definite etiopathy (DE) in this case. ***Remember, definite etiopathies are rare in medicine and psychiatry.*** Most of the causal specifiers are Factors Contributing to Manifestations of Mental Disorders (FCM_MD). These contributing factors (biological, environmental, social, developmental or others) play a part in contributing to the manifestations of the illness, but they stop short of being definite etiopathies. These contributing factors are very important in case formulation, differential diagnosis and treatment decisions. As our

understanding of these contributing factors improves, some contributing factors may be upgraded to definite etiopathies.

APPENDIX II

CAUSAL SPECIFIERS

OF

MENTAL DISORDERS

A. Biological

1. Drug abuse _1A: Alcohol
   _1B: Illicit drugs (e.g. THC, cocaine…etc.)
   _1C: Toxins (e.g. heavy metals)
2. Effects of prescribed medications (e.g. antidepressants, neuroleptics)
3. Effects of somatic treatment (e.g. ECT)
4. Discontinuing psychotropic medications
5. Biological Diseases _5A: Cerebral diseases:
   1. Trauma
   2. Infection (e.g. HIV, meningitis, cerebritis)
   3. Tumors
   4. Vascular (e.g. stroke)
   5. Seizure
   6. Hereditary (e.g. Huntington's disease)

7. Age related (e.g. dementia)

8. Brain imaging changes

9. Neurological diseases

10. Others

_5B: Systematic diseases:

1. Trauma

2. Infections

3. Tumors

4. Cardiovascular diseases

5. Hematologic diseases

6. Respiratory diseases

7. Nutritional diseases

8. Autoimmune disease (e.g. SLE)

9. Endocrine diseases

10. Encephalopathies (e.g. hepatic)

11. Gastrointestinal diseases

12. Renal diseases

13. Hypoxia

14. Electrolytes imbalances

15. Metabolic disease

16. Others

_5C: Specific conditions: 1. Peri-menstrual

2. Postpartum

3. Peri-menopausal

4. Others

6. Other biological factors

B. Genetic/familial Profile

C. Neuroscience Profile

1. Neurobiological profile
2. Neurotransmitters profile
3. Molecular biology profile
4. Biomarkers
5. Others

D. Environmental

1. Life events (e.g. death of a parent when the child was very young)
2. Adverse events in childhood _2A: poverty

_2B: neglect of a child

_2C: removal of a child from home

_2D: migration

_2E: other

3. Childhood abuse _3A: Emotional

_3B: Physical

_3C: Sexual

4. Traumatic events (catastrophes, wars…etc.)

5. Other environmental factors

E. Developmental

1. Developmental milestones (age of walking and talking, puberty changes).

2. Developmental problems: 2_A. Mental retardation

2_B. Learning disabilities

2_C. Others

3. History of serious illnesses in childhood

4. Family factors

5. Religious upbringing

6. Cultural factors

7. Other developmental factors

F. Social

1. Relationship factors _1A: Marriage

_1B: Separation

_1C: Divorce

_1D: Children

_1E: Problem with significant other

_1F: Living alone

_1G: Others

2. Change in support system _2A: Family

_2B: Friends

_2C: Doctors, therapists

_2D: Others

3. Social stressors

_3A; Jobs: 1. unemployment

2. underemployment

3. stressful work

4. stressful schedule

5. job change

6. discord with boss or co-workers

_3B: Financial

_3C: Educational: 1. illiteracy

2. problems in school

3. discord with teachers or classmates

4. other problems

_3D: Housing: 1. homeless

2. inadequate housing

3. moving to a new area

4. unsafe neighborhood

5. discord with neighbors

6. other

_3E: Physical illness of the patient, family member or others

_3F: Death of family members or friends

_3G: Access to health care services:

1. no health insurance

2. inadequate health insurance

3. transportation problem

_3H: Others

4. Legal

5. Other social factors

G. Psychodynamic factors

H. Behavioral factors

I. Cognitive factors

J. Personality characteristics factors

K. Other Categories

Appendix III

Degree of Certainty of Causal Specifiers

0: No cause

1: Some evidence exists: Factors Contributing to Manifestations of Mental Disorders (FCM_MD)

2: Strong evidence exists: Definite Etiopathy (DE)

C. DISORDERS CLASSIFICATION

(CATEGORICAL COMPONENT)

The clinician decides whether the symptom or cluster of symptoms causes significant distress (Appendix IV) or impairment of function (Appendix V). Finally, the clinician decides whether the patient meets the criteria for a psychiatric disorder(s) based on the DSM or ICD criteria.

APPENDIX IV

(DISTRESS EVALUATION)

A symptom or a cluster of symptoms can cause distress to the patient as follows:

CODES:

0 = No distress

1 = Some distress, but manageable

2 = Significant distress: the patient is distressed, upset or bothered by symptom(s) more than half the time

APPENDIX V

(FUNCTION IMPAIRMENT EVALUATION)

A symptom or a cluster of symptoms can affect the function of the patient as follows:

CODES:

0 = No effect on social or occupational activities

1 = Some impairment in social and occupational activities, but many activities are still intact

2 = Significant impairment of most or all social and occupational activities

The SCIP Follow-up Assessment

After the initial evaluation is completed and the patient is diagnosed with a certain disorder or disorders, follow-up visits focus on changes in symptoms, the patient's response to treatment, including medications, and the overall progress of the patient. For example, for a patient diagnosed with Major Depressive Disorder and a SCIP depression score of 20, follow-up visits should focus on depressive symptomatology and comparing depression scores over time. Clinicians also observe and assess the development of new symptoms over time, which may or may not affect the current diagnoses.

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